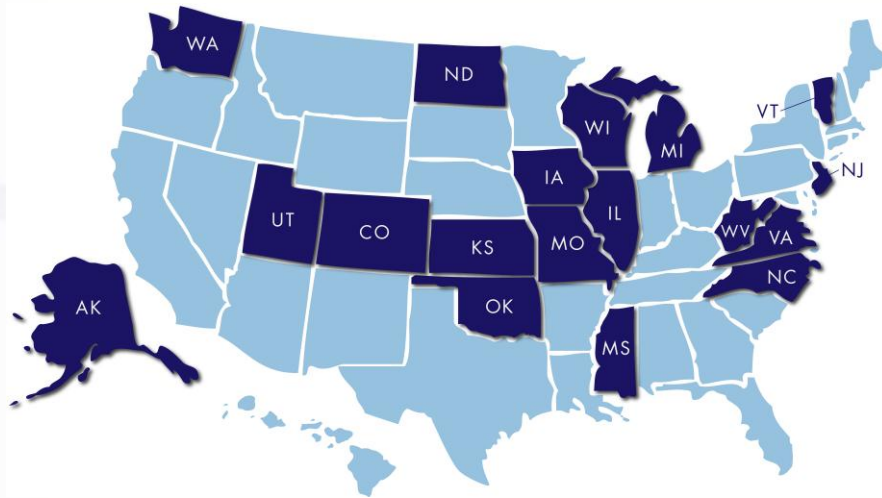
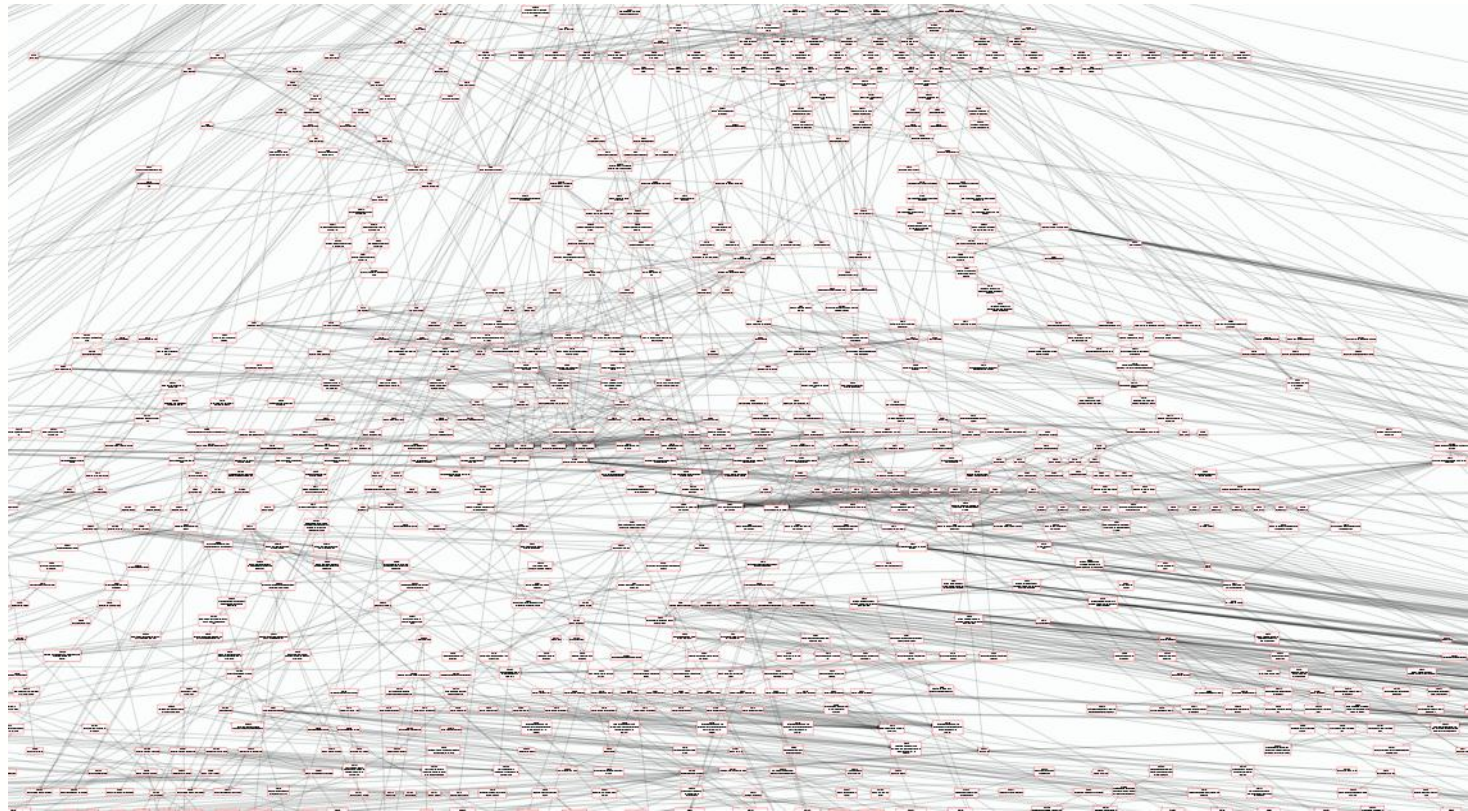


Overview of The Dynamic Learning Maps Alternate Assessment System

Neal Kingston
February 7, 2014



DLM State Membership Map and Portion of Mathematics Learning Map



DLM Eligibility Criteria

1. The student has a significant cognitive disability.
2. The student is primarily being instructed using the DLM Essential Elements as content standards.
3. The student requires extensive direct individualized instruction and substantial supports to achieve measureable gains in the grade-and age-appropriate curriculum.

Students with the most complex needs (3:01)

What are the key features of DLM?

- Instructionally-embedded assessments
- Instructionally relevant testlets
- Fine-grained learning maps
- A subset of particularly important nodes that serve as content standards - Essential Elements
- Accessibility and alternate pathways
- Dynamic assessment
- Status and growth reporting that is readily actionable
- Professional development
- A technology platform to tie it all together

Why instructionally embedded?

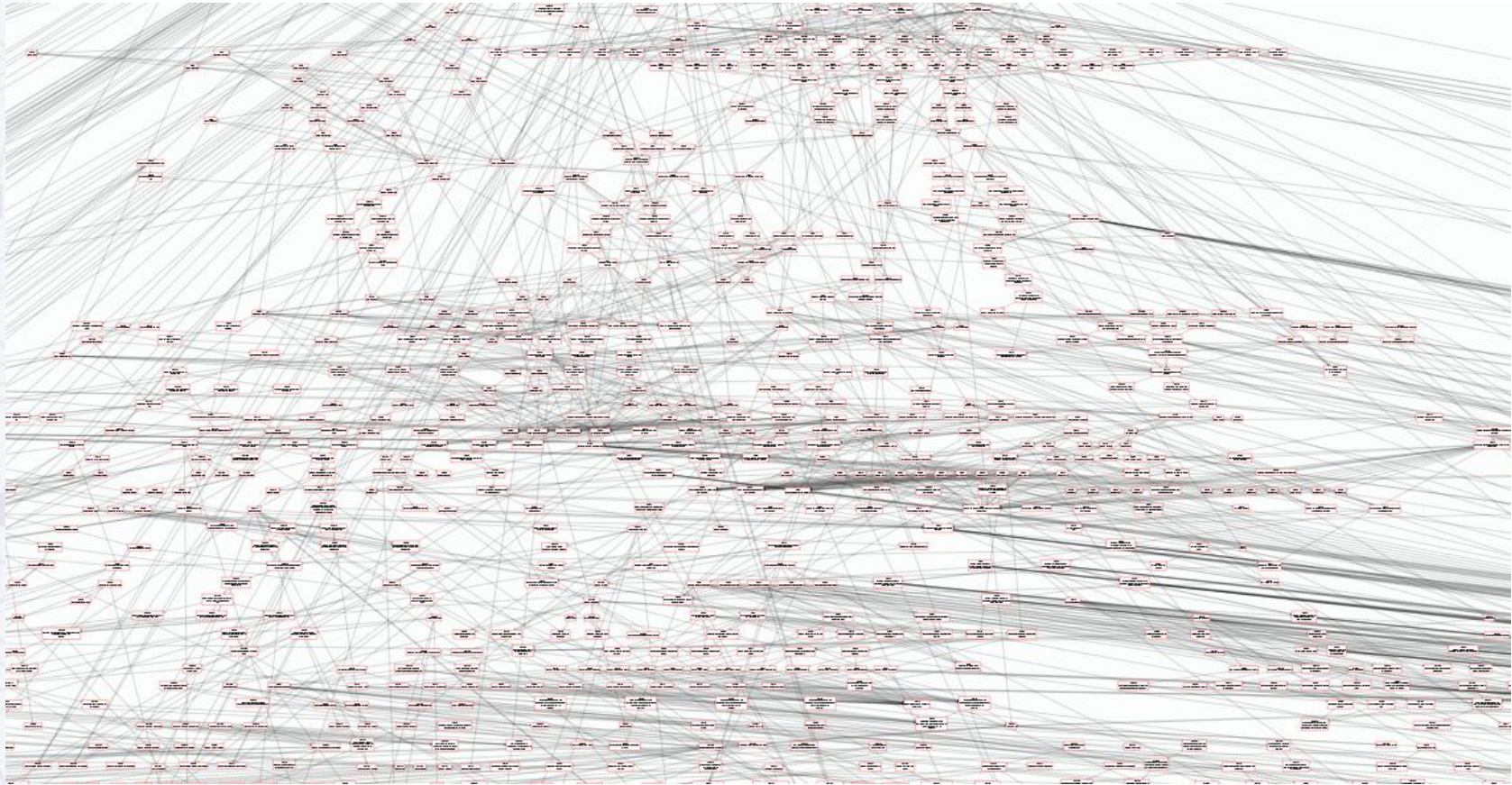
- Assessment is most useful when it is designed to help teachers help students learn!
 - Better to modify the assessment than modify the instruction
 - 1 task every other week for 30 weeks = about 60 items (Compared to a typical summative alternate assessment with perhaps 30 items)
 - Observe growth

What is instructional relevance?

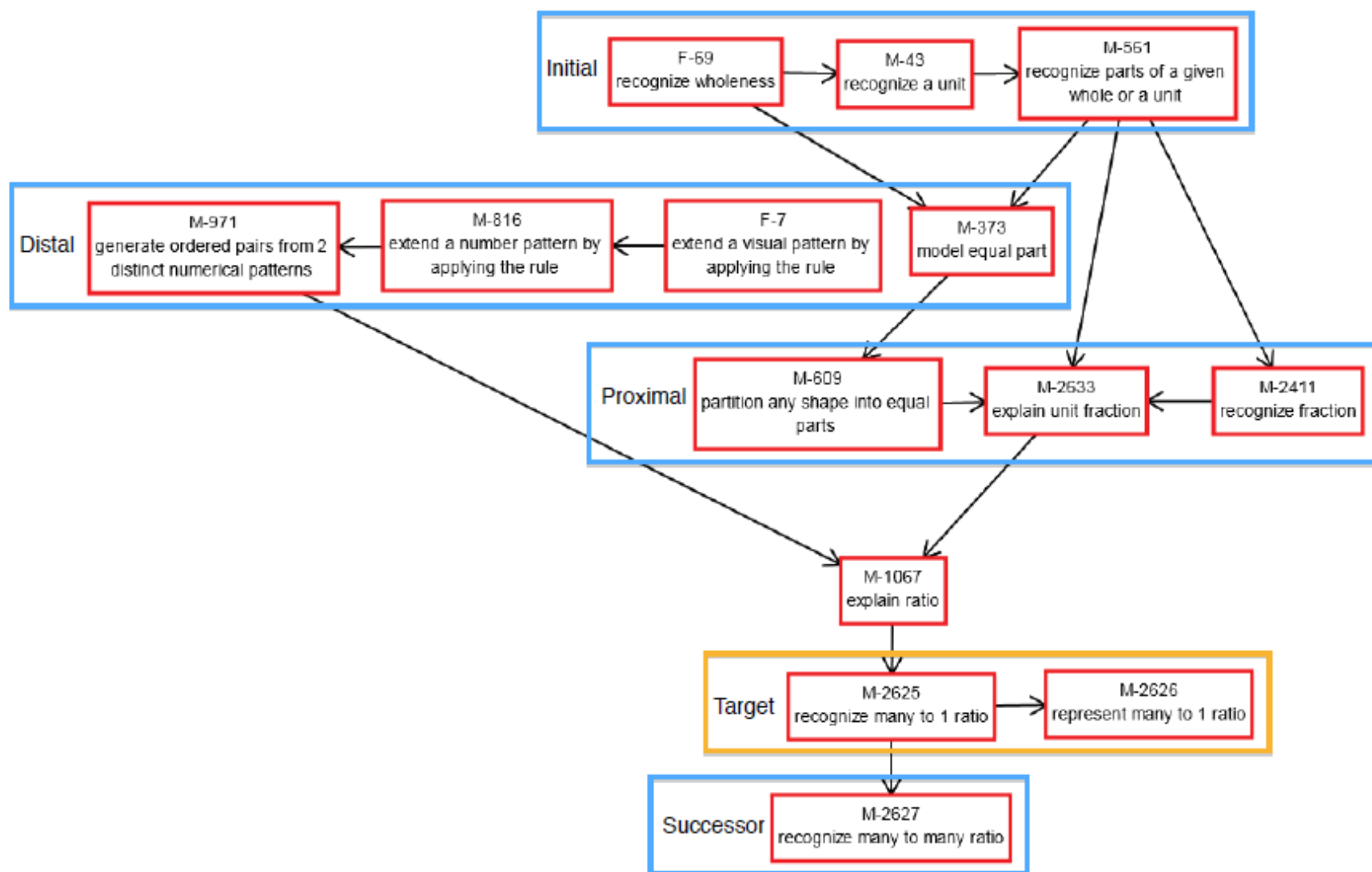
- Instructionally Relevant Testlet
 - Reflects best instructional practice
 - Provides useful examples
 - Promotes the content standard being measured
 - Tests for common misunderstandings
 - Results inform instruction
- Guiding principal - activities teachers would want to use for purely instructional reasons!

THE LEARNING MAP

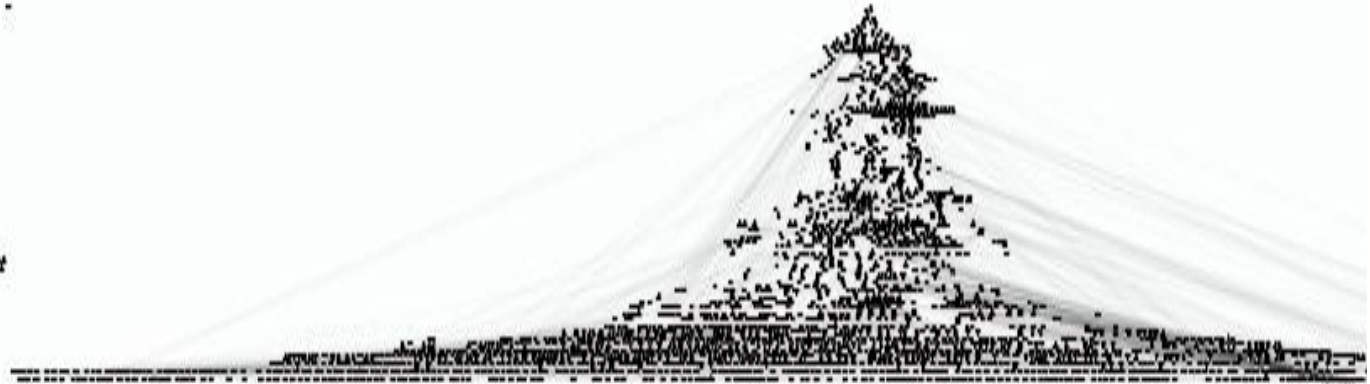
A Portion of the Math Map



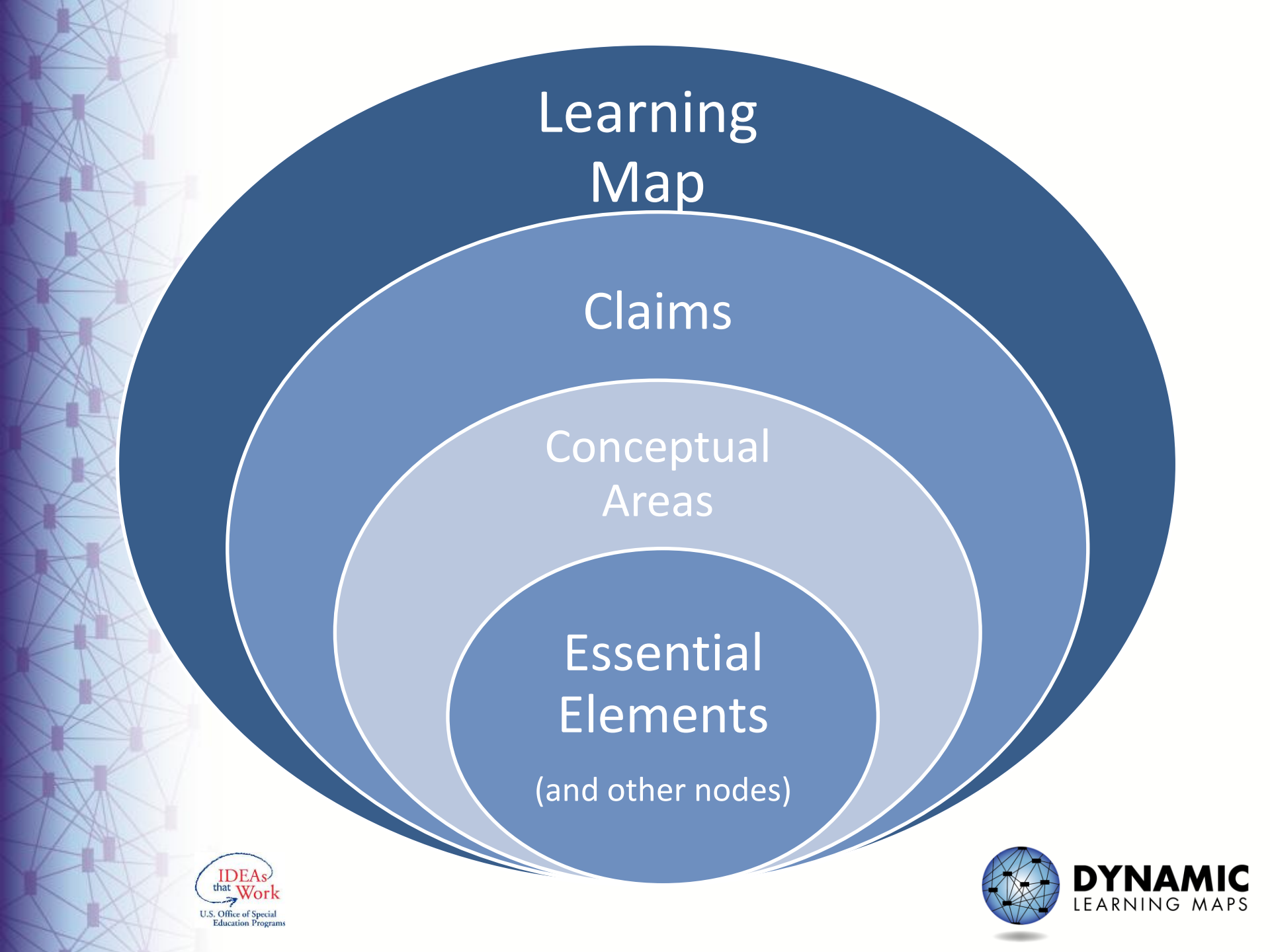
M.EE.6.RP.1: Demonstrate a simple ratio relationship.



Quick Facts about the Map



- ELA
 - 139 foundational nodes
 - 1,300 ELA nodes
 - 2,850 connections
- Mathematics
 - 139 foundational nodes
 - 2,312 mathematics nodes
 - 4,788 connections



Learning Map

Claims

Conceptual Areas

Essential Elements

(and other nodes)

DLM Claims

English Language Arts - Claim 1

Students will comprehend text in increasingly complex ways

Mathematics - Claim 1

Students will demonstrate increasingly complex understanding of number sense.

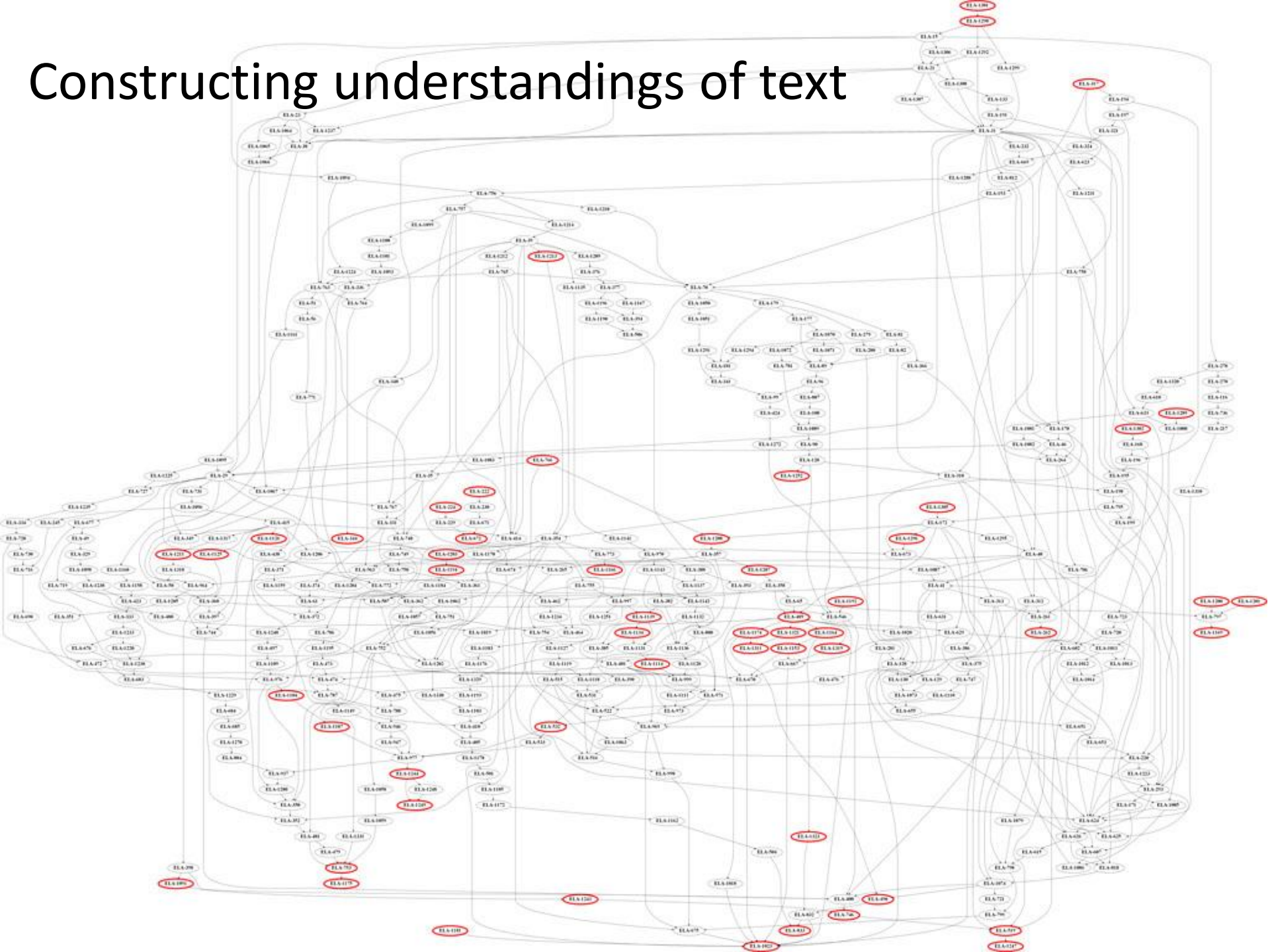
Conceptual Areas

- Comprised of nodes that represent the development of related skills and processes in the learning map
 - nodes that have been identified as the target for an Essential Element
 - nodes preceding and extending beyond the targets

English Language Arts

Major Claims	Conceptual Areas
Students can comprehend text in increasingly complex ways	Determining critical elements of text
	Constructing understandings of text
	Integrating ideas and information from text
Students can produce writing for a range of purposes and audiences	Using writing to communicate
	Integrating ideas and Information in writing
Students can communicate for a range of purposes and audiences	Using language to communicate with others
	Clarifying and contributing to discussion
Students can investigate topics and present information	Using sources and information
	Collaborating and presenting ideas

Constructing understandings of text



Mathematics	
Major Claims	Conceptual Areas
Students demonstrate increasingly complex understanding of number sense.	Understand number structures (counting, place value, fraction)
	Compare, compose, and decompose numbers and sets
	Calculate accurately and efficiently using simple arithmetic operations
Students solve increasingly complex mathematical problems, making productive use of algebra and functions.	Use operations and models to solve problems
	Understand patterns and functional thinking
Students demonstrate increasingly complex spatial reasoning and understanding of geometric principles.	Understand and use geometric properties of two- and three-dimensional shapes
	Solve problems involving area, perimeter, and volume
Students demonstrate Increasingly complex understanding of measurement, data, and analytic procedures.	Understand and use measurement principles and units of measure
	Represent and interpret data displays

WHAT ARE ESSENTIAL ELEMENTS?

Definition of Essential Elements

The DLM Essential Elements (EEs) are specific statements of the content and skills that are linked to the Common Core State Standards (CCSS) grade level-specific expectations for students with significant cognitive disabilities.

DLM Essential Elements

- Reduced depth, breadth, complexity
- Provide appropriate level of rigor and challenge
- Focus on the skills (with multiple means of demonstration)
- Are a starting point for defining achievement standards
- Are not functional or pre-K skills or instructional descriptions

Example for English Language Arts

Common Core State Standard

- RL.6.2 **Determine a theme or central idea** of a text and how it is conveyed through particular **details**; provide a summary of the text distinct from personal opinions or judgments.

Essential Element

- EE.RL.6.2 **Determine the theme or central idea** of a familiar story and identify **details** that relate to it.

Example for Mathematics

Common Core State Standard

- 4.MD.5. **Recognize angles as geometric shapes** that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
 - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.
 - An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

Essential Element

- EE.4.MD.5. **Recognize angles in geometric shapes**



HOW DO ESSENTIAL ELEMENTS RELATE TO THE MAP?

Feelings of Characters

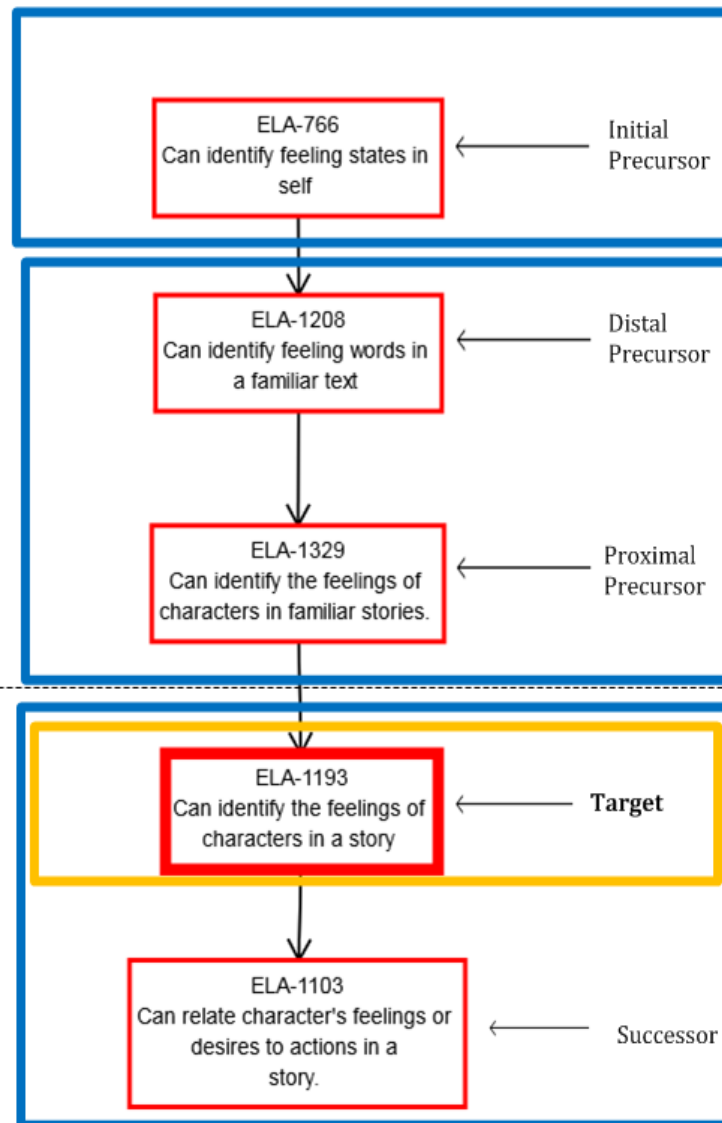
ELA.EE.RL.3.3
Identify the feelings of the characters in a story

EE.RL.3.3-Identify the feelings of characters in a story.

Items
Embedded
and/or at
Conclusion

Items
Embedded
in Text

Items
Embedded
in Text



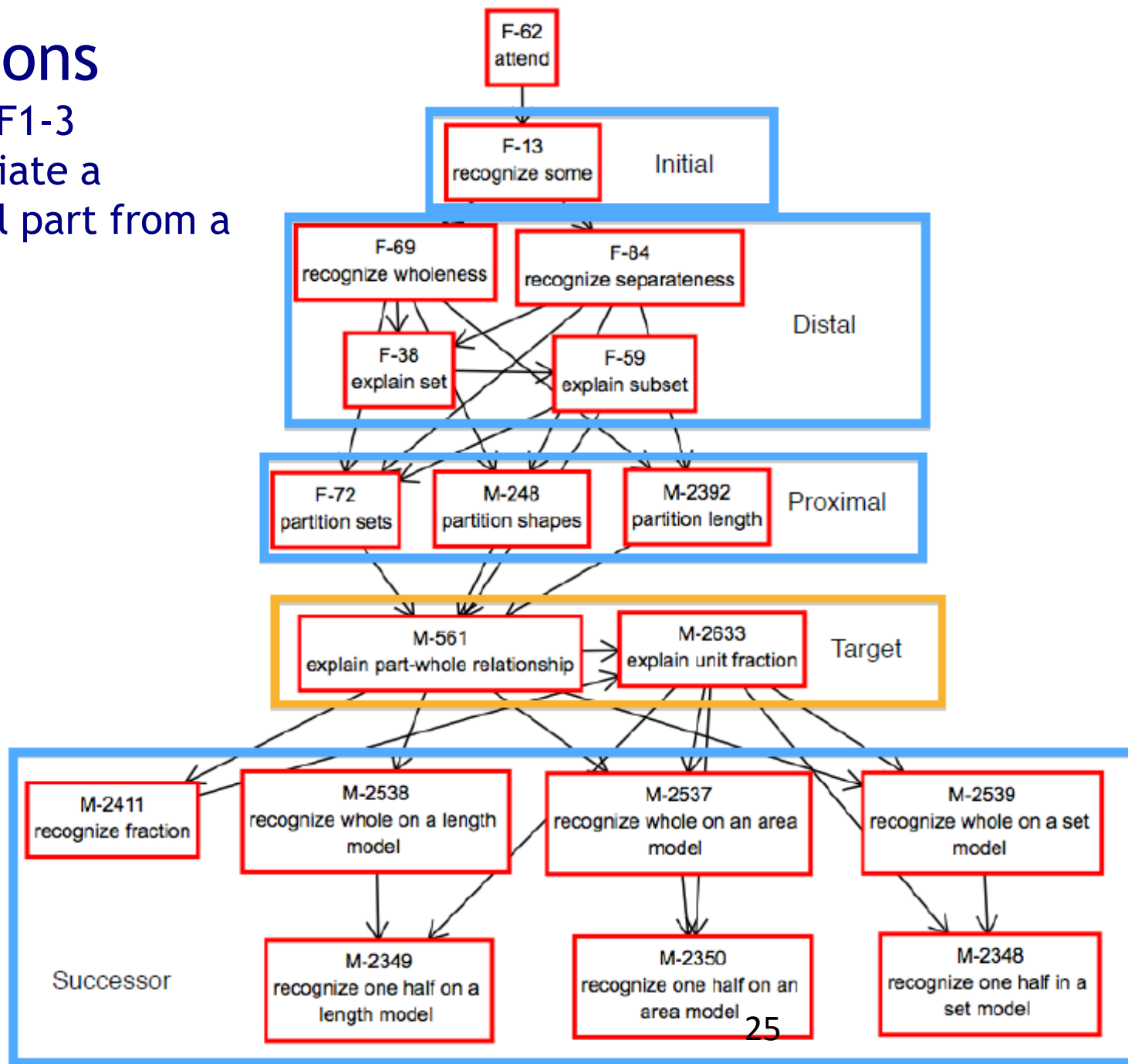
Familiar
Text

Unfamiliar
Text

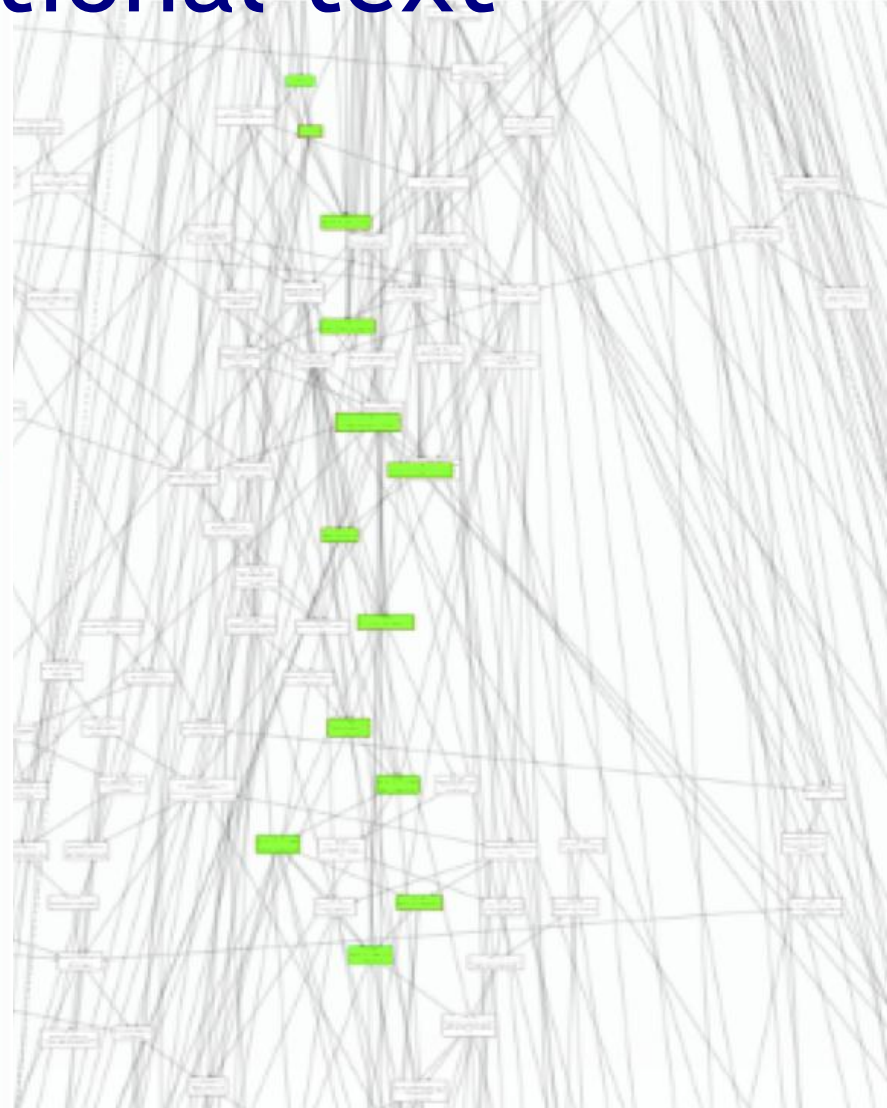
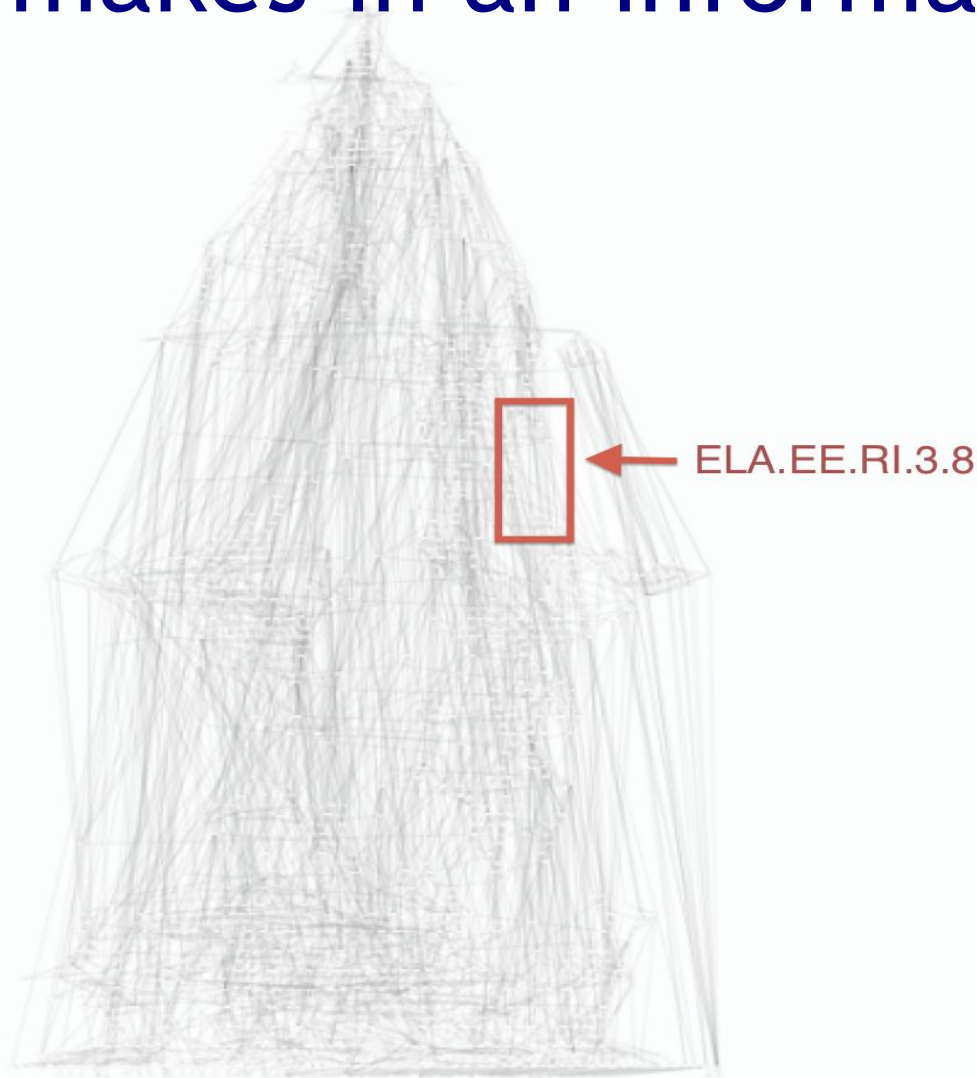
Fractions

M.EE.3.NF1-3

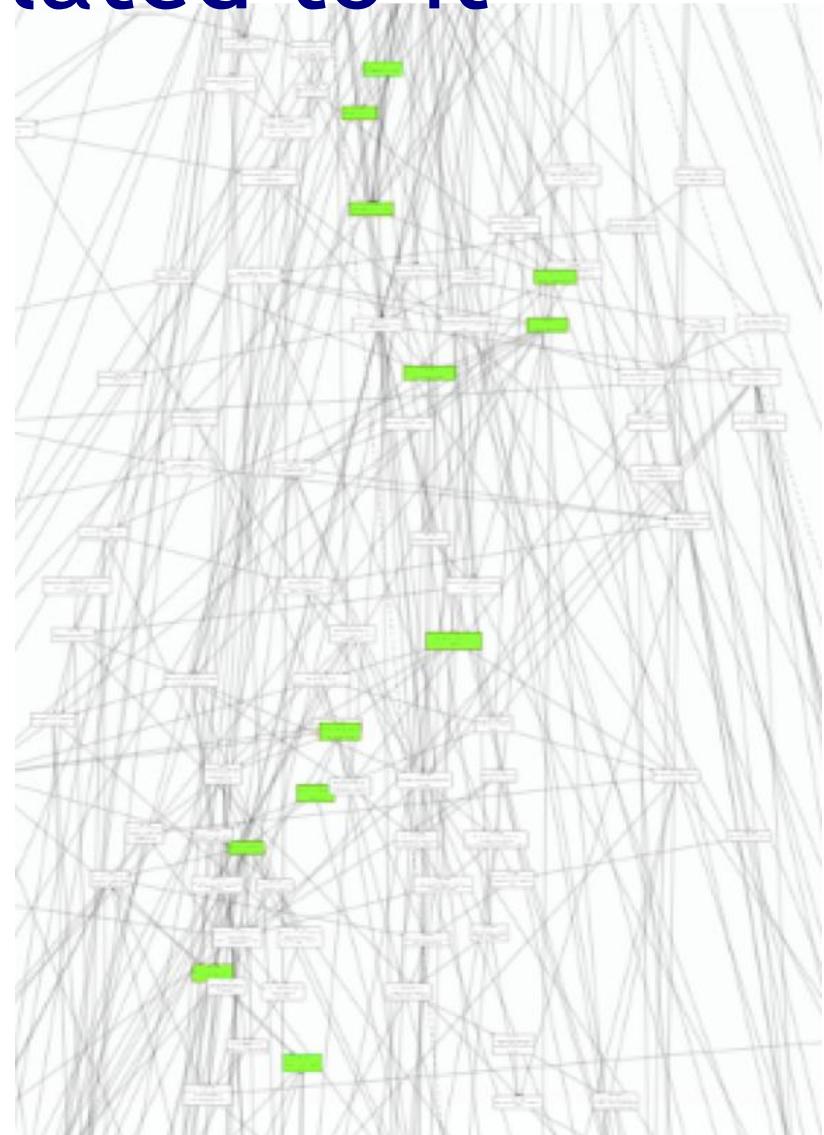
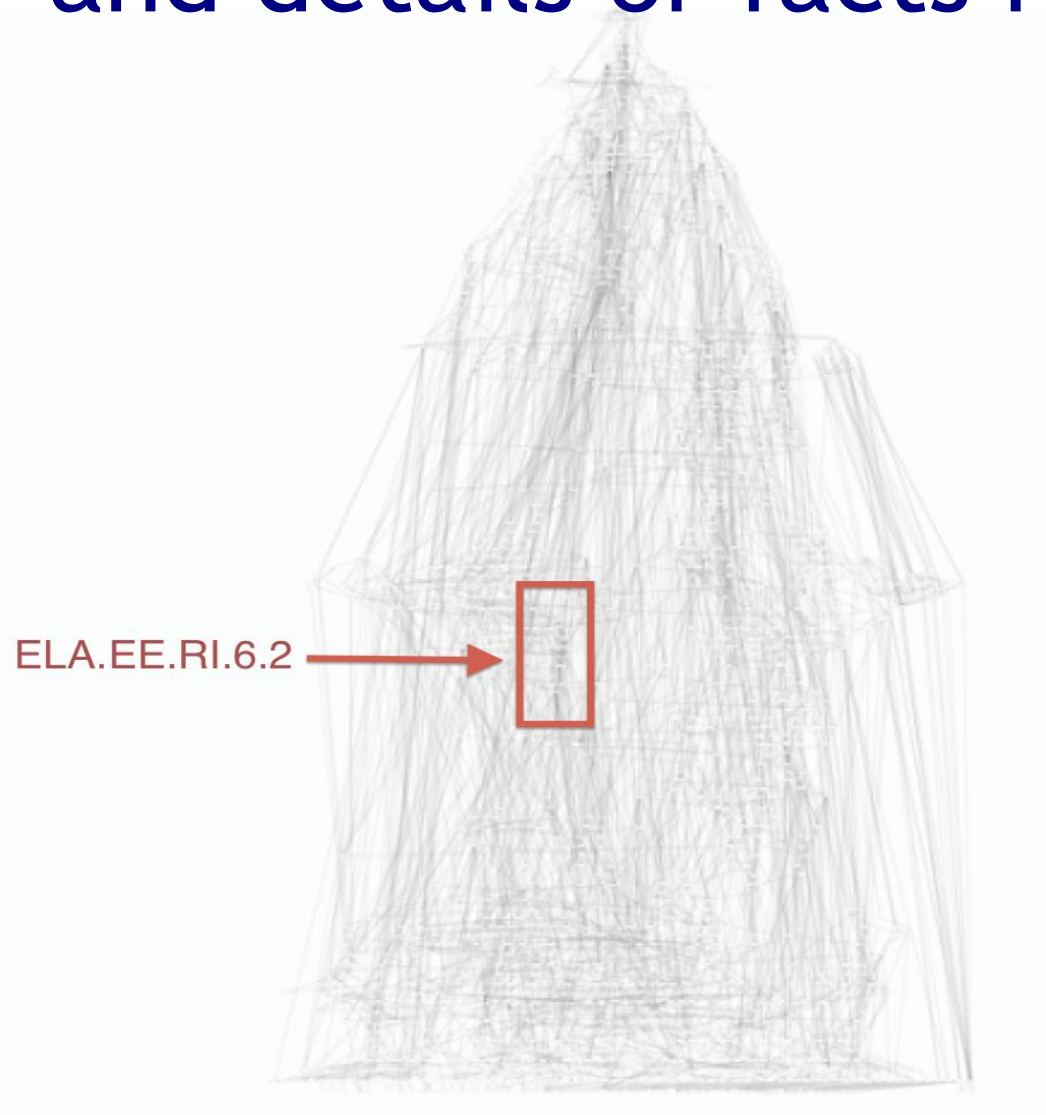
Differentiate a fractional part from a whole



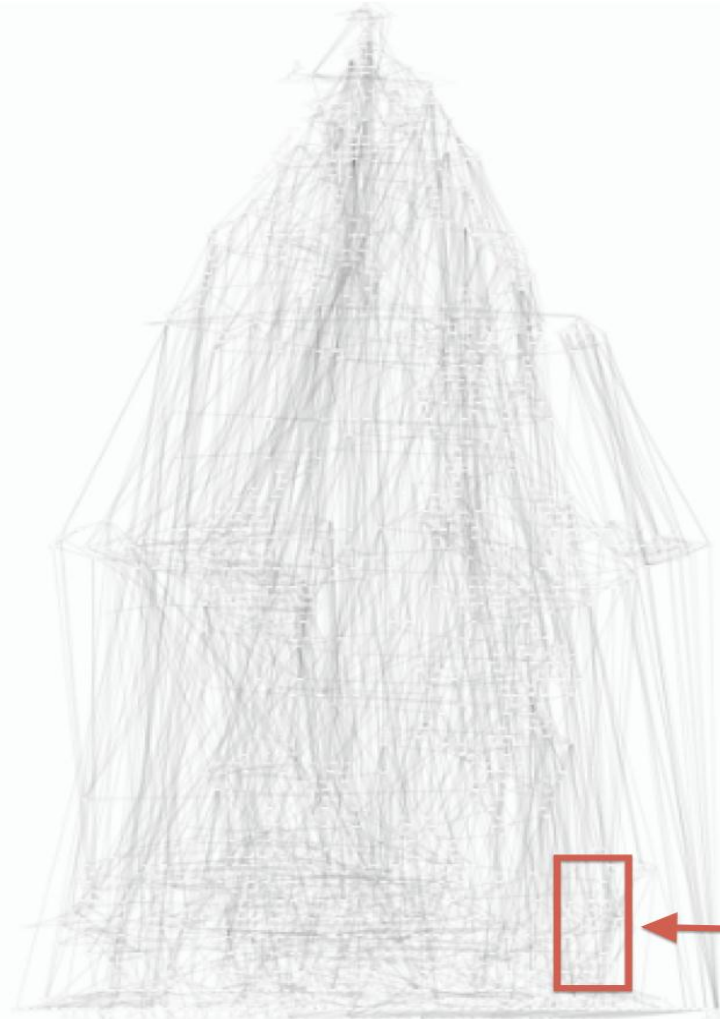
Identify two related points the author makes in an informational text



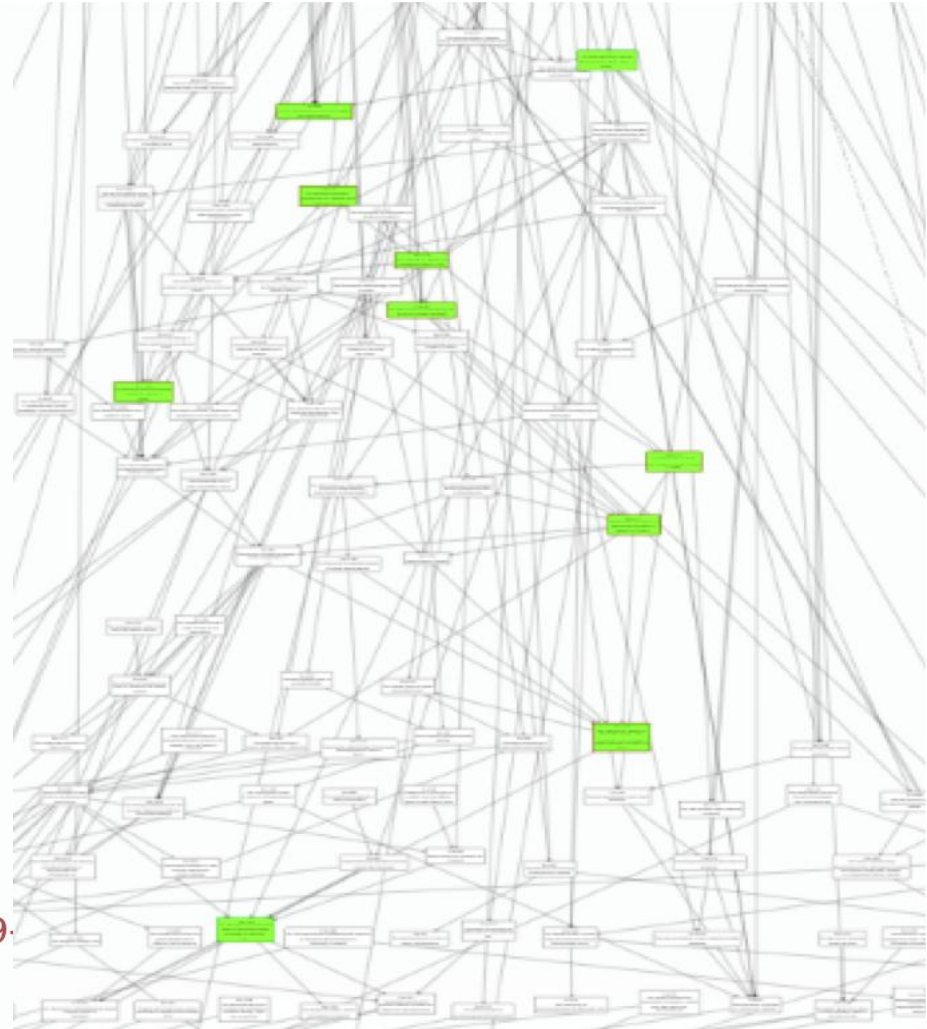
Determine the main idea of a passage and details or facts related to it



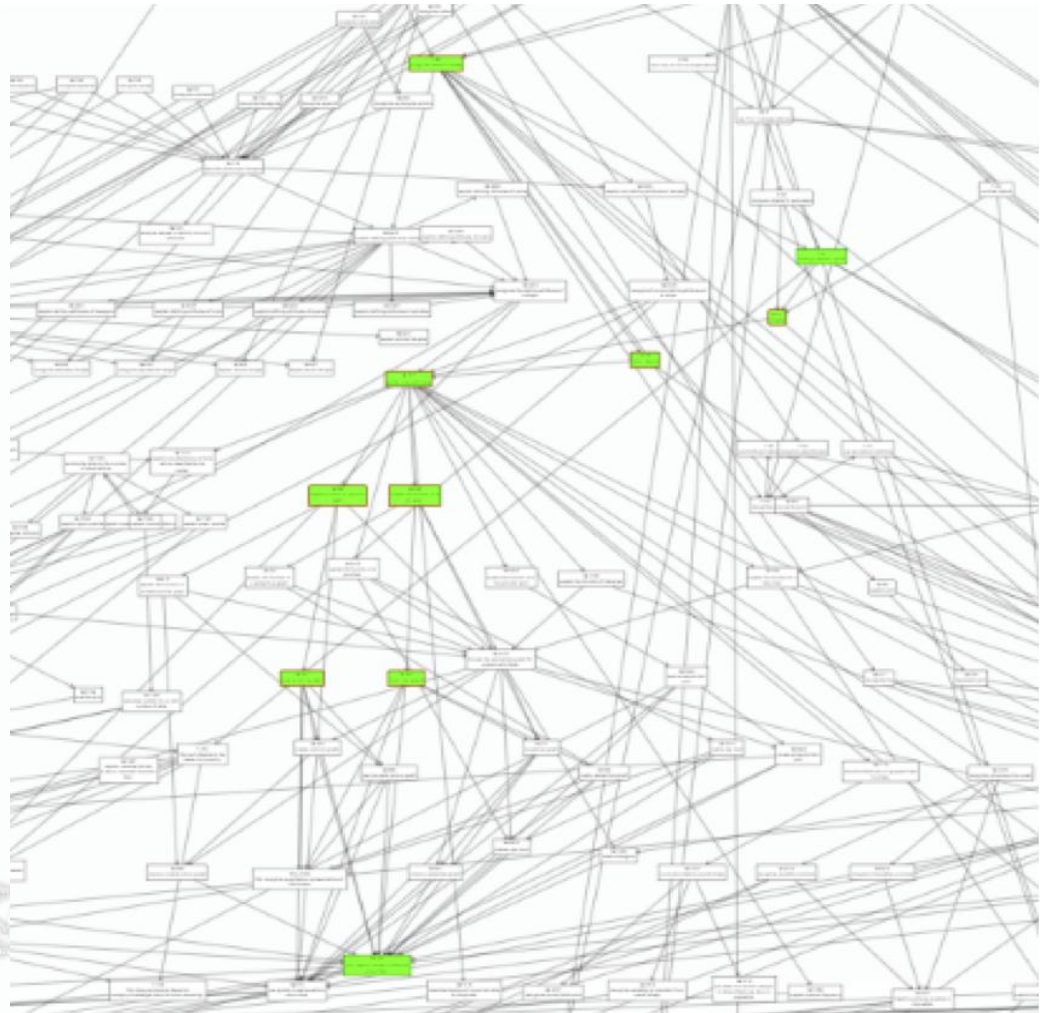
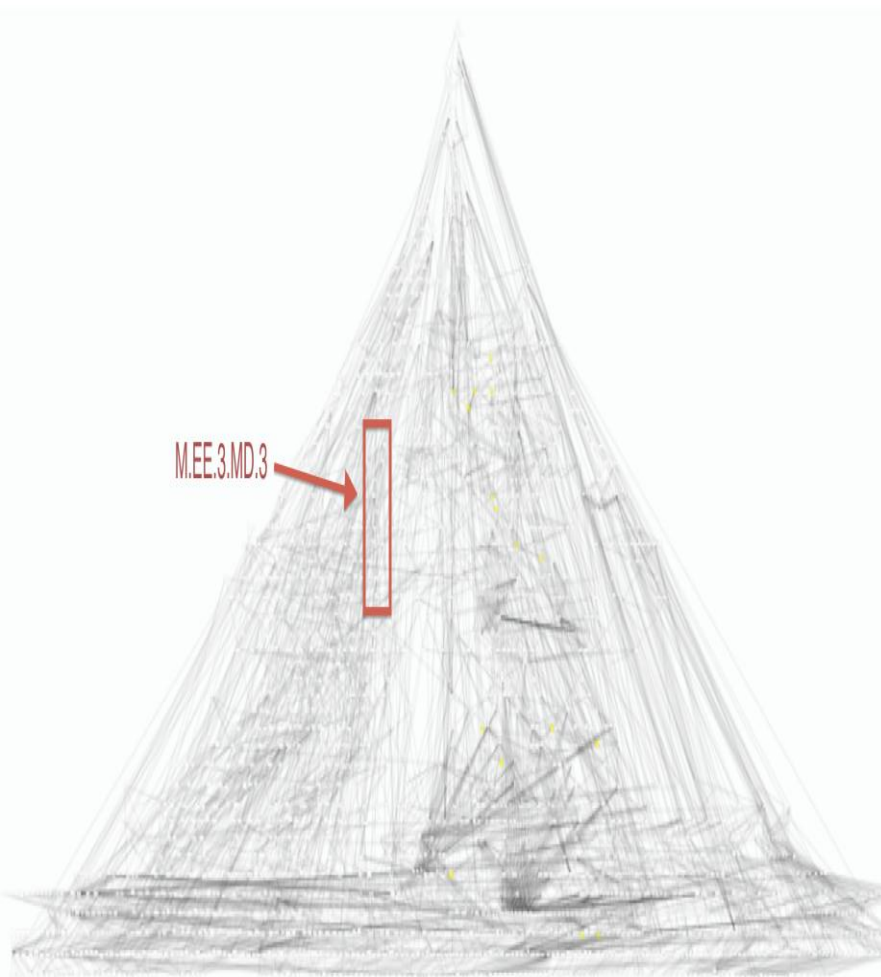
Determine the meaning of words and phrases as they are used in a text, including idioms, analogies, and figures of speech



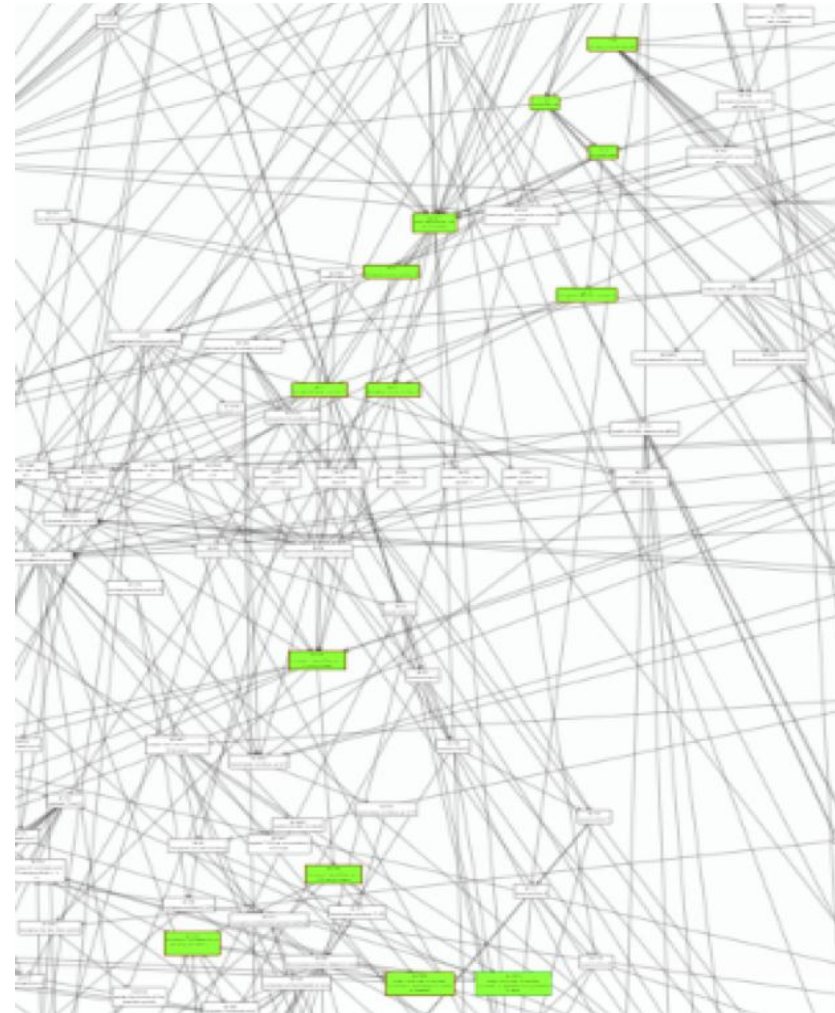
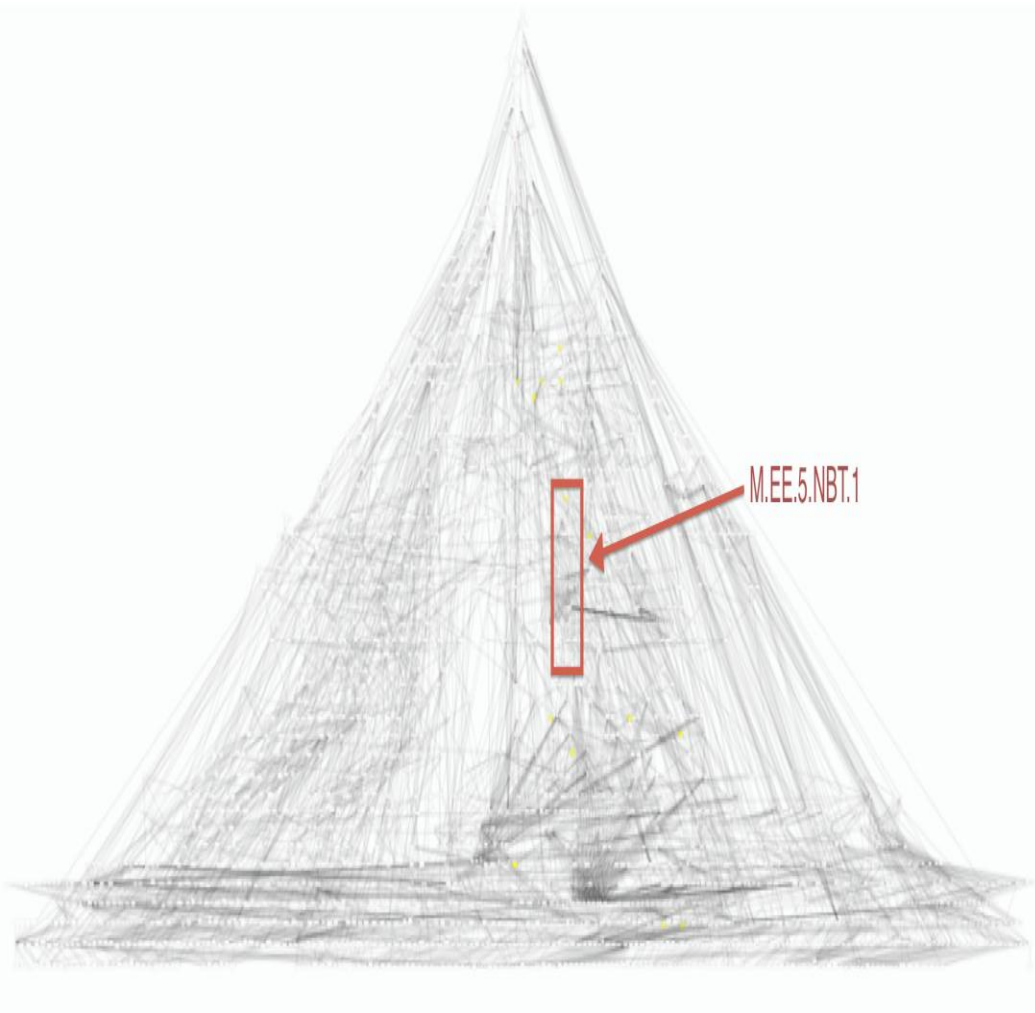
← ELA.EE.RL.9.



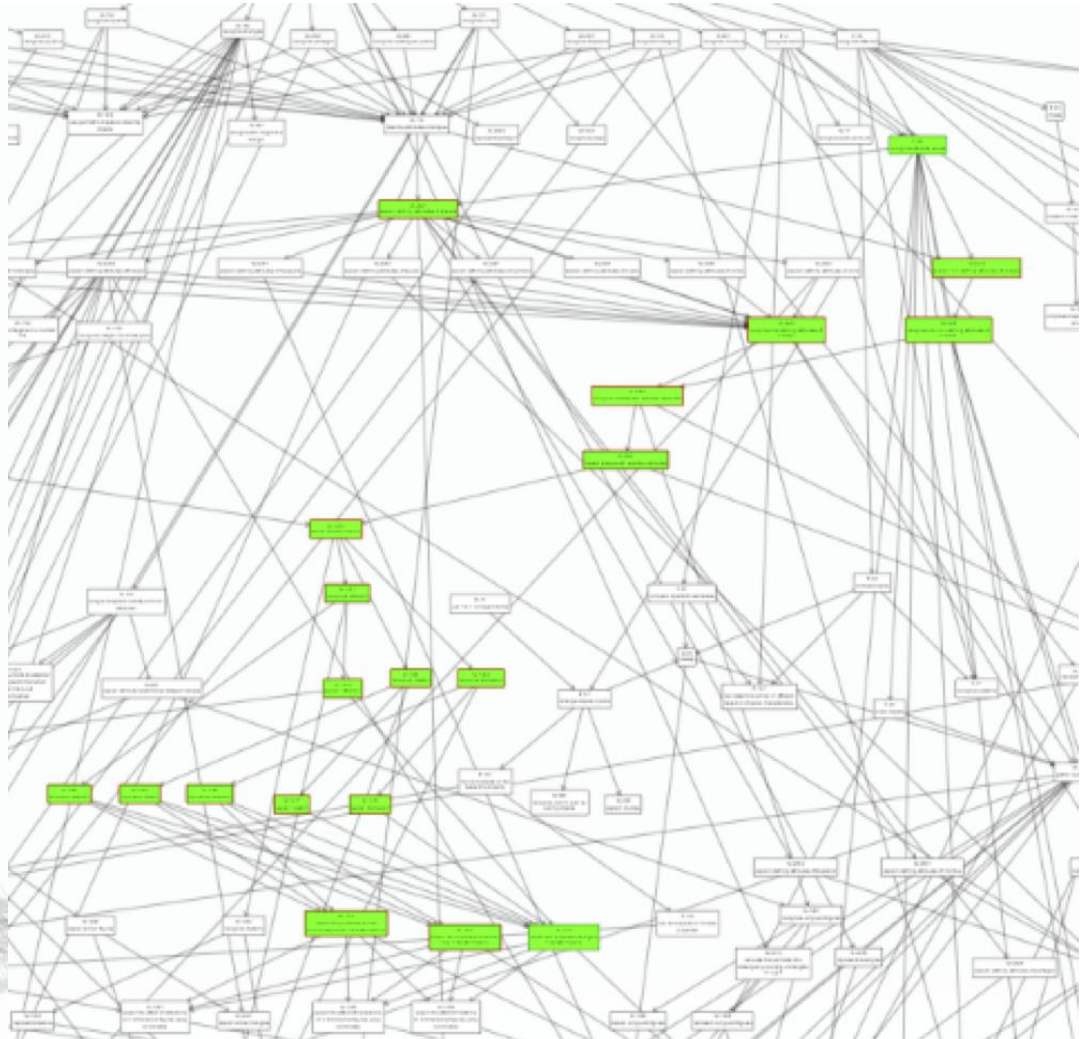
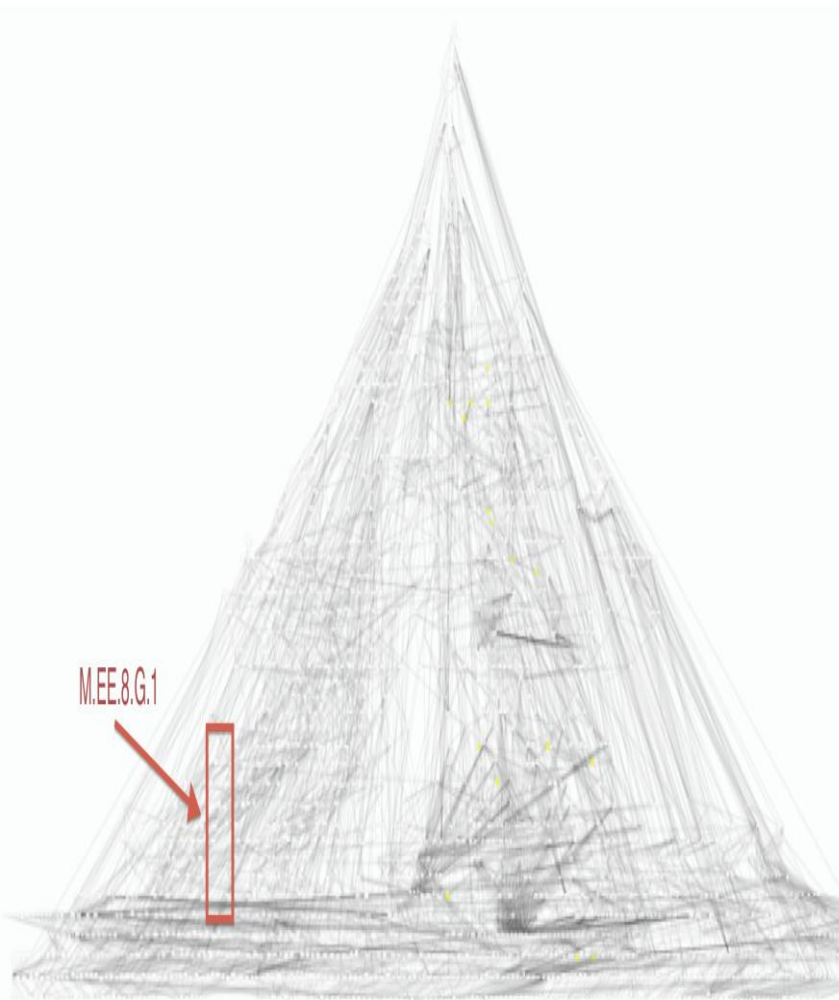
Use picture or bar graph data to answer questions about data



Compare numbers up to 99 using base ten models



Recognize translations, rotations, and reflections of shapes



OVERVIEW OF TESTLETS

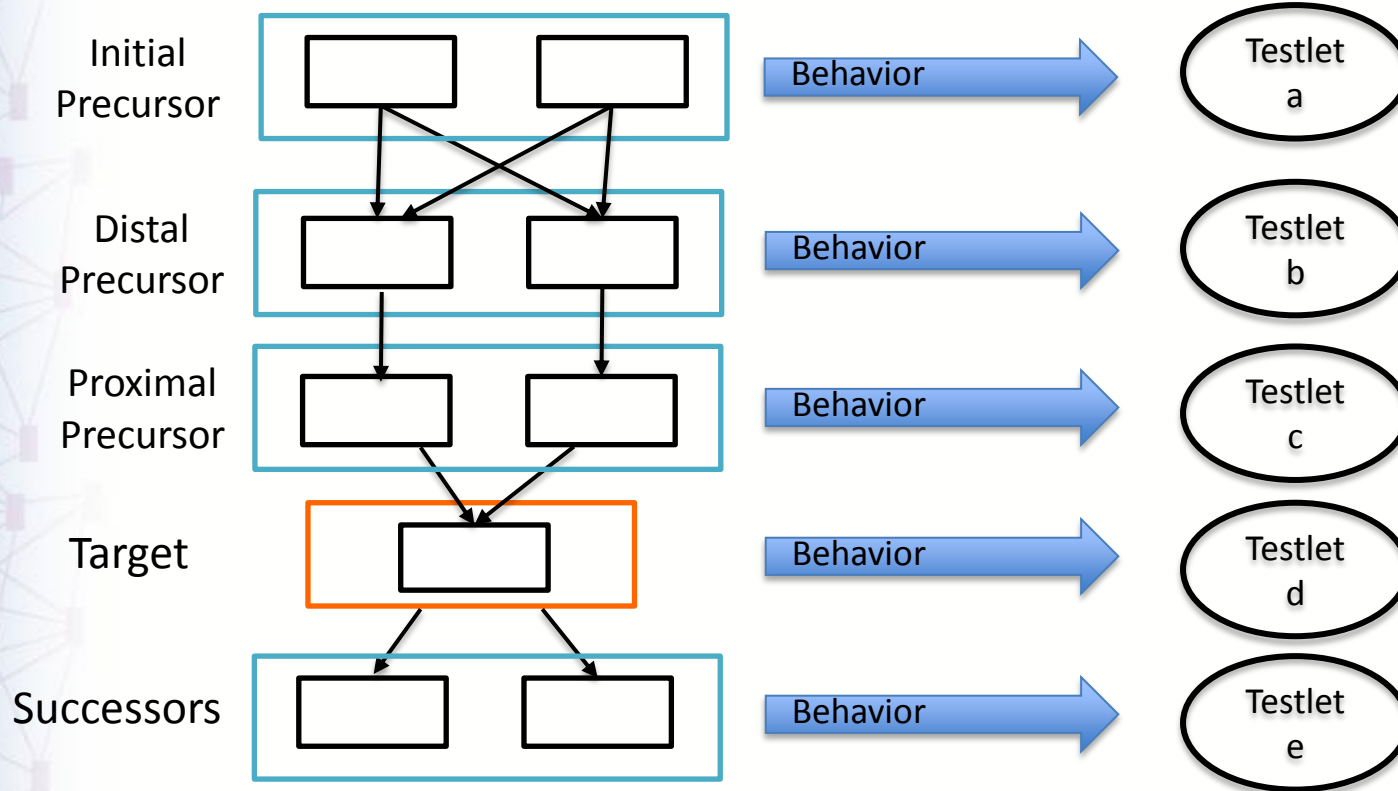
Assessment Design

- Instructionally relevant testlets
 - ELA, math, soon science
- 3 - 5 linkage levels per EE
- Item types
- Accessibility by design
- Delivery

Testlets in Linkage Levels

Connect the map...

...to the items developed.



Structure of a Testlet

- Begins with engagement activity
 - Motivate students
 - Activate prior knowledge
 - Prepare for the cognitive process required in the items
- ELA: Text presented twice; questions embedded and at conclusion on 2nd read
- Math: series of questions or problems related to single topic

Two DLM Videos About Testlets

- [English Language Arts](#)
- [Mathematics](#)

SAMPLE ITEMS

Initial Precursor (7th grade)

Educator Directions:

Present the seven cups to the student in a way that captures the student's attention. For example:

- Draw the student's attention to the presence of the cups.
- Talk about how cups are used for drinking juice, water, etc.

Once the student has attended to the cups, stack five cups together and leave two cups separated. Indicate to the student that the stacked cups are in a group and the other cups are separate.

On the next screens, you will ask the student some questions about the cups.

EE: Solve multiplication problems with products to 100.

Node: Recognize set/ recognize separate

Educator Directions:

SHOW: the stacked cups.

SAY: “Here are some cups.”

SHOW: the separate cups.

SAY: “Here are some more cups.”

SHOW: the stacked cups and the separate cups.

SAY: “Show me the group of cups.”

Record student response:

- ☐ Indicates the group of stacked cups
- ☐ Indicates the separate cups
- ☐ Indicates one cup or all of the cups
- ☐ Attends to other stimuli
- ☐ No response

Initial Precursor (4th grade RI)

Educator Directions:

SHOW: one of the familiar, identical objects. Then give the student a moment to explore the object.

SHOW: the other familiar, identical object. Then give the student a moment to explore the object.

SHOW: a new or different object that was not used in the previous item.

Record student response:

- ☐ Attends longer to the new or different object
- ☐ Attends equally to all of the objects
- ☐ Attends only to familiar objects
- ☐ Attends to other stimuli
- ☐ No response

Target (5th grade RI)

Why do trees need water?

to grow

to move

to stretch

EE & Node: Identify the relationship between a specific point and supporting reasons in an informational text

Target (HS)

Jay counts \$1.00. Jay then counts \$0.25. What is the total amount Jay counts?

\$0.75

\$1.25

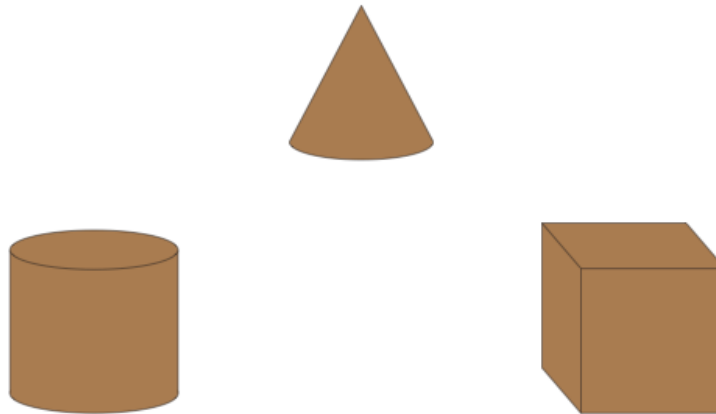
\$1.75

EE: Solve real world problems involving addition and subtraction of decimals and whole numbers, using models when needed.

Node: Solve word problems involving addition with rational numbers

Proximal Precursor (HS)

Deb finds a cylinder. Which shape is a cylinder?



EE: Use properties of geometric shapes to describe real-life objects.

Node: Recognize cylinders

OTHER ITEM TYPES

Item Types

- Single-select multiple choice
- Multi-select multiple choice
- Technology enhanced:
 - Drag and drop
 - Sticky drop bucket
 - Matching lines
- Teacher observation*
- Extended performance event*

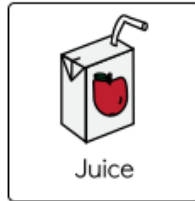
Single-Select Multiple Choice

Which is a circle?



Technology Enhanced: Sorting via Drag-and-Drop Grid

Sort the pictures below into **foods** and **drinks**.



Foods



Drinks

Technology Enhanced: Sorting via Sticky-Drop Bucket

Sort the words into **people** and **places** from *Peter Pan*.

Wendy Darling

Neverland

Captain Hook

People

Places

Mermaid Lagoon

Technology Enhanced: Matching Lines

Match the character to their story.

Mad Hatter

Long John Silver

Tin Woodman

The Wonderful Wizard of Oz

Treasure Island

Alice's Adventures in Wonderland

The Jungle Book

Teacher Observation

Educator Directions:

SAY: "Show me buttons."

Record student response:

- ☐ Indicates buttons
- ☐ Indicates an object other than buttons
- ☐ Indicates multiple objects
- ☐ Attends to other stimuli
- ☐ No response

BACK ↩

NEXT ➡

Prototype: Extended Performance Event

You are going to ask students to work on a writing project. Begin by ...

- *Describe a writing mini-lesson that teachers will do with a student or small group of students.*

Teacher Directions

- Ask student to spend some time planning what they are going to write. Planning might include selecting a topic, generating a list of related words, creating a graphic organizer, or other strategies.

Item 1a

Which statement best describes how the student engaged in planning?

- 1 Successor-based description
- 2 Target population description
- 3 Proximal precursor description
- 4 Distal precursor description
- 5 Initial precursor description

Teacher Directions

- Continue to support the student in writing on the topic they have selected.

Item 2a

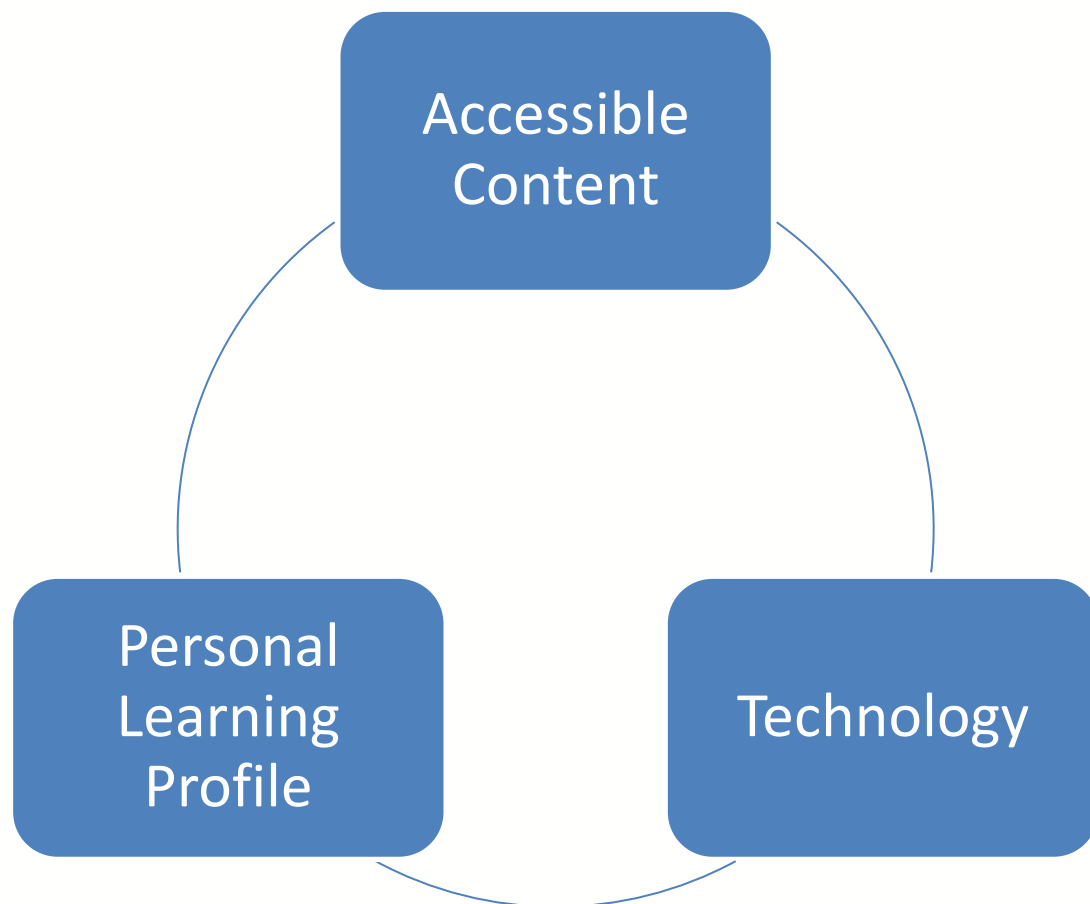
Which statement best describes the way the student is developing the topic with facts or details?

- 1. Description based on successor node.*
- 2. The topic is provided with two or more facts or details that build on each other.*
- 3. The topic and two or more facts or details are provided.*
- 4. The student identified information related to the topic but does not write about it.*
- 5. The student selected a topic but cannot write about it.*

- Continues through more composition EEs...to evaluation of product

ACCESSIBILITY

Accessibility



Personal Learning Profile

Personal Needs and Preferences (PNP)

- Display
- Language & Braille
- Audio & Environment

First Contact

- Communication
- Academics
- Sensory characteristics
- Motor characteristics
- Computer access

KU – Management and Reporting System

educator.cete.us/AART/studentRecords.htm

Adobe Connect Login- EP TDE- QA PMP Certification Handbook Project Management Program BenchPrep G...AP Courses KU Human R... - Welcome LeanDog Videos

Welcome	Special Education	Sensory Capabilities	Motor Capabilities	Computer Access	Communication	Academic	Attention	Complete
---------	-------------------	----------------------	--------------------	-----------------	---------------	----------	-----------	----------

Expressive Communication

Submit Survey

Previous Next

Does the student use speech to meet expressive communication needs?

☐ Yes

☐ No

Previous Next

KU – Management and Reporting System

educator.cete.us/AART/studentRecords.htm

Adobe Connect Login– EP TDE– QA PMP Certifi...on Handbook Project Man...ent Program BenchPrep G...AP Courses KU Human R... – Welcome LeanDog Videos

Kristin Skeet

Summary Display Enhancements Language & Braille Audio & Environment Support

Display Enhancements

Kristin Skeet - Grade Not Available

Save

☐ **Magnification**

☐ Activate by Default

2x

☐ **Overlay Color**

☐ Activate by Default

☐ **Invert Color Choice**

☐ Activate by Default

☐ **Masking**

☐ Activate by Default

☐ Answer Masking

☐ Custom Masking

☐ **Contrast Color**

☐ Activate by Default

ABC ABC ABC

ABC ABC ABC

ABC ABC ABC

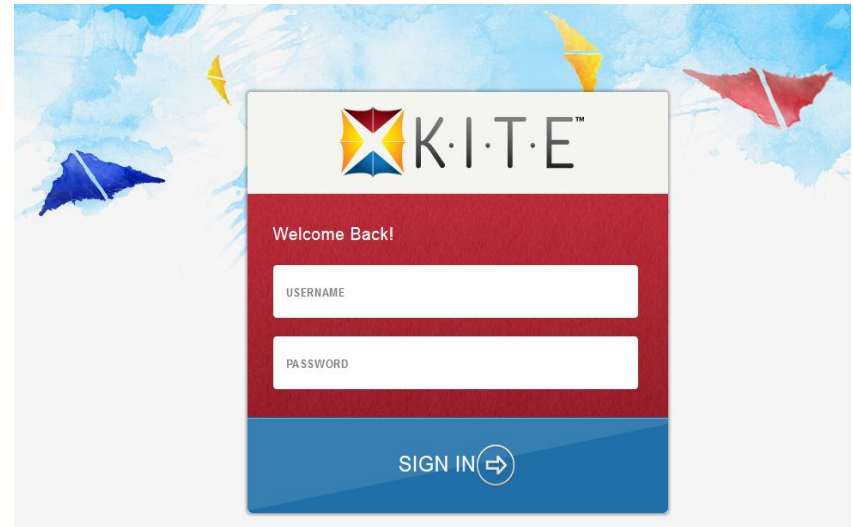
Background Color Hex

Accessible Content

- Testlet levels
- Vocabulary
- Multiple and alternate pathways
- Items tagged
- Item writing guidelines
 - Prior knowledge

ASSESSMENT DELIVERY

Technology



- Special user interface
- Dynamic routing

Welcome back, Demo!



TAKE A TEST 



PRACTICE FIRST 

Sample DLM Tests

Assessment Delivery

- Instructionally Embedded
- Year End

Instructional Support Interface

1. Student roster in Educator Portal
2. Teacher selects EE for a student*
3. Teacher selects level within the EE*
4. Routed to information about that EE

*System recommends, teacher chooses

Instructional Support Interface

The screenshot displays the 'Instructional Support Interface' with a navigation bar at the top containing 'Home', 'Test Management', 'Test Builder', 'Professional Development', 'Reports', and 'Configuration'. The 'Test Management' tab is active. Below this is the 'Instructional Tools' section, which includes a sub-navigation bar with 'Test Management', 'Instructional Tools', 'Ticketing', 'Future Label 1', and 'Future Label 2'. The 'Instructional Tools' sub-tab is active. A red circle highlights the 'DLM' tab in the sub-navigation bar, and a red arrow points from it to the text '4 steps'. Below the sub-navigation bar, there are four tabs: 'Roster', 'DLM', 'Linkage Level', and 'Confirmation'. The 'DLM' tab is also highlighted with a red circle. Below these tabs, there is a form with the following fields: 'Selected Student Last Name, First Name', 'Grade: N', 'Educator Last Name, First Name', 'Select Content Area', 'Select Claim', 'Select Conceptual Area', and 'Select EE'. The 'Select Content Area' field is highlighted with a red circle. To the right of the form are 'Back' and 'Next' buttons.

Kite Logo

Sign Out
Logged in as Awesome, User

Home Test Management Test Builder Professional Development Reports Configuration

Instructional Tools

Plan instruction and assessment, review student profile and assessment history

Test Management Instructional Tools Ticketing Future Label 1 Future Label 2

Roster DLM Linkage Level Confirmation

Selected Student Last Name, First Name Grade: N Educator Last Name, First Name

Back Next

Select Content Area ▼

Select Claim ▼

Select Conceptual Area ▼

Select EE ▼

4 steps

Descriptions

- ELA.EE.RL.4.3 Use details from the text to describe characters in the story.
- The student can relate story-specific details to the relevant character(s) in a familiar story and use these details for descriptive purposes. Focus is on the student's demonstration of knowledge of appropriate word descriptions for characters.

Year-End

- Delivered in separate testlets
- Tested at-will during the window
- May be flexibility in which EEs
- System will always determine the linkage level

REPORTING

Reporting

- Multiple levels of reports for multiple users
 - Subject, claim, conceptual area, EE
 - Teachers, parents, SEA/LEA
- For multiple purposes
 - Visual displays of progress in the map
 - Content-rich explanations of progress, next steps

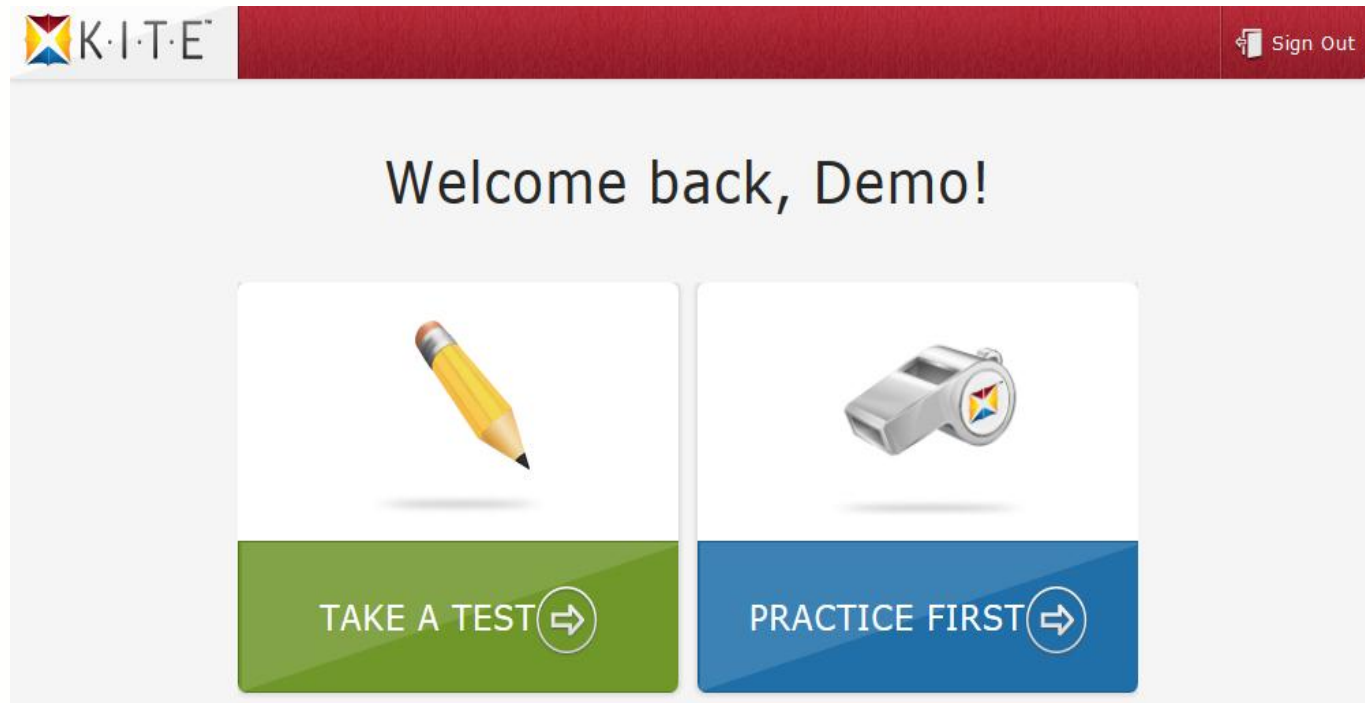


TECHNOLOGY SYSTEM

Four Integrated Applications

- Learning Map
- Content Builder
- Test Delivery Engine (“KITE”)
- Educator Portal

Test Delivery Engine (KITE Client)



- Secure browser
- Works on PC, Mac, iPad
- Can use with SmartBoards

Educator Portal



- Professional development
- Student rosters
- PNP & FC information
- Instructional support interface
- Reports

A screenshot of the Educator Portal sign-in interface. The form is white with a light blue border and is set against a background of a blue sky with clouds. It contains a 'SIGN IN' heading, a 'USERNAME:' label above a text input field, a 'PASSWORD:' label above another text input field, a green 'Sign In »' button, and a 'Forgot Password?' link. At the bottom, it says '© 2013. University of Kansas.' There are also small decorative icons of a blue umbrella and a green paper airplane on the right side of the form.

SIGN IN

USERNAME:

PASSWORD:

Sign In » [Forgot Password?](#)

© 2013. University of Kansas.

PROFESSIONAL DEVELOPMENT

Professional Development Plan

- Focused on:
 - Instruction
 - Flexible methods of delivery
 - Building a Community of Practice
- Requires:
 - ✓ Completion of the Essential Elements
 - ✓ Identification of Claims and Conceptual Areas
 - Completion of DLM assessment technology
 - Identification of Linkage Nodes

Overview Modules

- Common Core Overview*
- Essential Elements Overview*
- Universal Design for Learning*
- Principles of Effective Instruction in English Language Arts*
- Standards of Mathematics Practice*
- Students with Significant Cognitive Disabilities

Modules Aligned with Claims and Conceptual Areas in Math and ELA

Goal: Create a cohesive system that emphasizes cognitive, linguistic, and conceptual development

- **English Language Arts**

- 22 modules aligned with 4 Claims and 9 Conceptual Areas

- **Mathematics**

- 19 modules aligned with 4 claims and 9 Conceptual Areas

Additional Modules

- Assessment Review and Administration
 - Item Review
 - Administering the Assessment:
 - Pilot Test
 - Field Tests
 - Fully-operational Assessment
- Individualized Education Plan

Virtual Community of Practice

(launched 9.1.2013)

Phase I

- Monthly webinars (with archive)
- PD Team Blog
- Monitored discussion threads
- Communities (formed by participants)
- Tar Heel Reader Exemplar Text Library
- Lesson-planning Templates
- DLM Core Vocabulary Support

Virtual Community of Practice

(Phase II)

- DLM video library
- Instructional Unit Examples
 - Inclusive Settings
 - Self-contained Settings
- Instructional Materials Repository
(materials created by DLM - linked to specific Essential Elements and Linkages)
- Instructional Materials Exchange (curated materials created by educators)

DISCUSSION: APPROACHES TO TRAINING

Some State Approaches

- Area Education Agencies - 1 person with AT and populations background does facilitated modules (IA)
- SEA uses facilitated version of Essential Elements module w/fidelity, adds pieces of others; has teachers take those full self-directed independently (MO)
- Listserv & iTunes U to distribute information about self-directed (KS, MS)

SPRING 2014 FIELD TESTS



DYNAMIC
LEARNING MAPS

Field Test Overview

- Students will be administered 3 testlets (approximately 12-15 items) per content area during each field test
- System will still allow for exiting and returning to the assessment
- All will include teacher survey for feedback on features
- Also developing & testing technology

Field Test 1

- February
- 2 EEs assessed per grade and content area
 - All students assessed on both EEs
- Focus: Initialization into the map using data from the pilot

Field Test 2

- March 17th - April 11th
- 5-10 EEs assessed per grade and content area
 - Each student assessed on 2 EEs per content area
- Focus: First version of adaptivity for teachers
 - Teachers able to select testlets

Field Test 3

- May 1* - End of academic year
- 5-10 EEs assessed per grade and content area
 - Each student assessed on 2 EEs per content area
- Focus: Usage reporting and recommendation functions for teachers

Educator Resources for Field Tests

Background

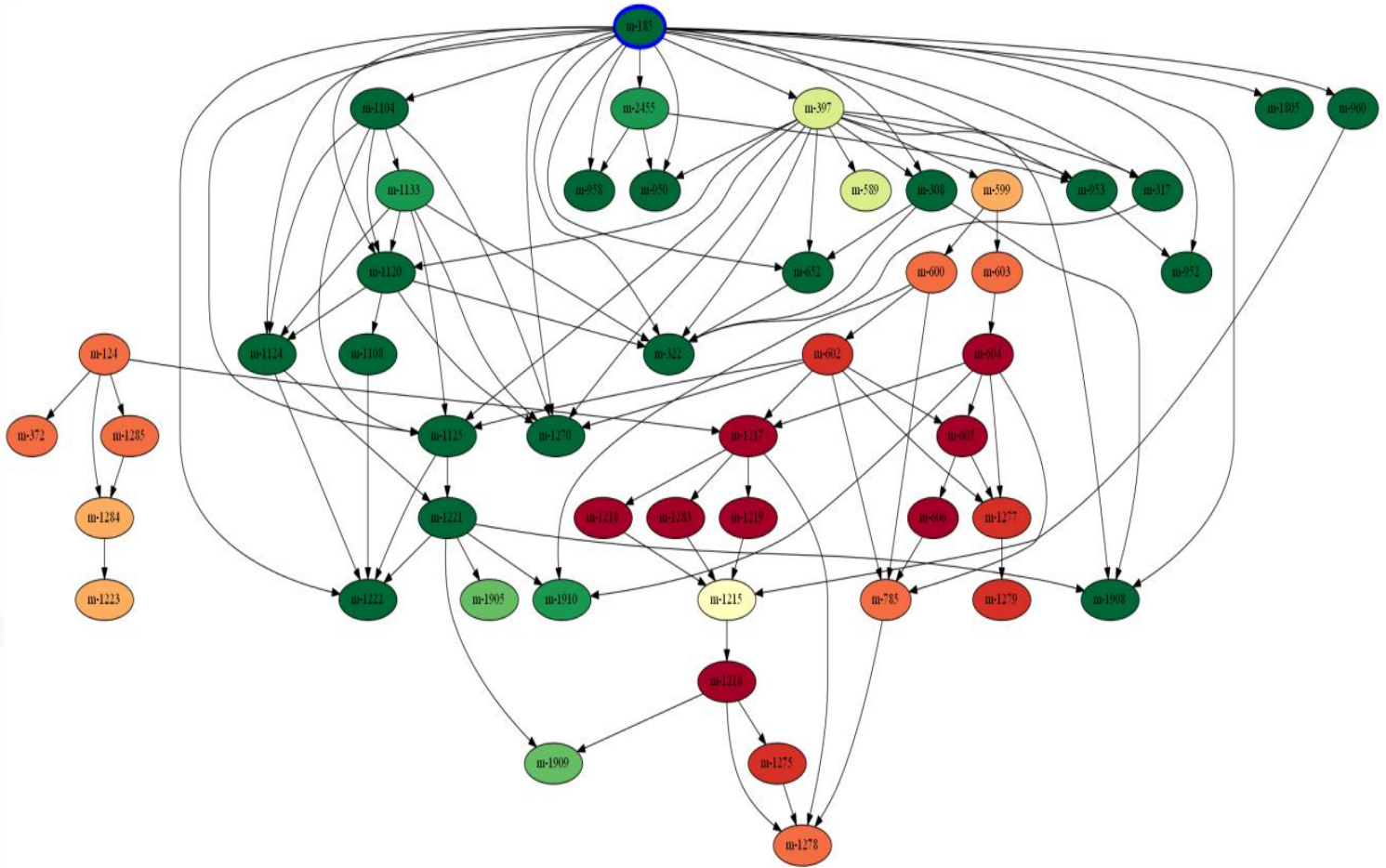
- Video explaining the testing event
- Video overview of the DLM system
- Nodes and mini-maps for the assessed EEs
- Fact sheet
- PNP and FC

The Assessment

- User guide
- Practice activities (students learn the interface)
- Released testlets
- Materials used in the assessments
- Demonstration videos

THOUGHTS ON SCORE REPORTING

#1: Visualizing Student Progress



#2: Map Views for Planning

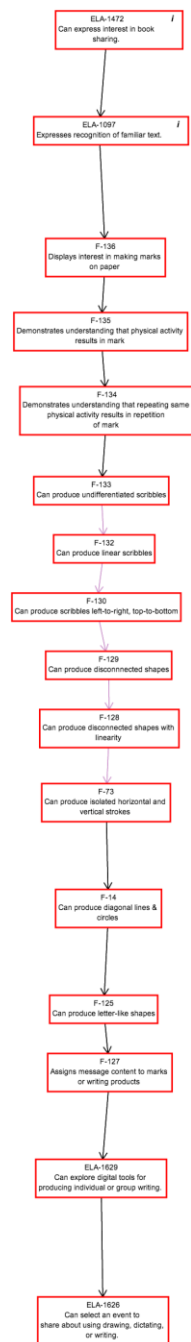
ELA-1472

i

Can express interest in book sharing.

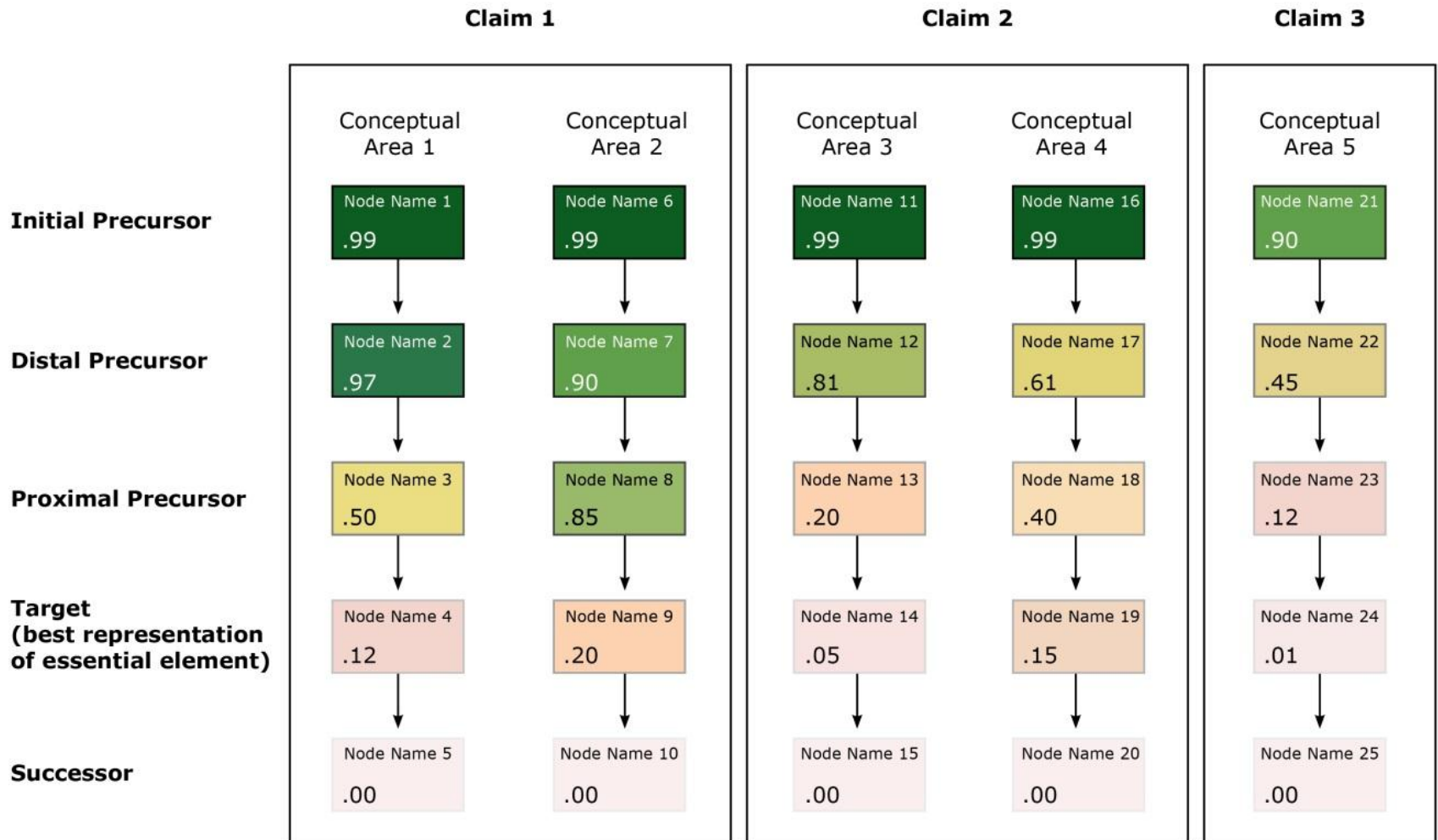
ELA-1626

Can select an event to share about using drawing, dictating, or writing.





Hypothetical Set of Tested Grade 5 ELA Essential Element Linkage Levels and One Student's Probability of Mastery



CONSORTIUM MEMBERSHIP



DYNAMIC
LEARNING MAPS

Consortium Membership

- Development of ELA and Mathematics
 - \$20k for 2013-14 and 2014-15 (prorated)
- Development of Science
 - \$500k
- Operational Administration in 2014-15
 - \$10 per student per test
- Operational Administration in 2015-16
 - \$39 per student per test

THANK YOU!

For more information, please contact:

dlm@ku.edu

or

Go to: www.dynamiclearningmaps.org

For Professional Development, contact:

dlm@unc.edu



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DYNAMIC
LEARNING MAPS